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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,640	10/18/2004	Weixiao Liu	PU020138	6427

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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
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2611

MAIL DATE	DELIVERY MODE
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07/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/511,640

Applicant(s)

LIU ET AL.

Examiner

Kevin M. Burd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/18/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action, in response to the remarks filed 5/16/2007, is a final office action.

Response to Arguments

2. The objection to the oath, declaration or application data sheet is withdrawn.
3. The objection to the drawings is maintained. It is unclear how the receiver shown in figure 1 is not prior art when Wang (US 6,266,380) discloses the same figure 1. The components of figure 1 of Wang are the same as the instant application's figure 1.
4. Applicant's arguments filed 5/16/2007 have been fully considered but they are not persuasive. Applicant states Shanley does not calculate a preselected number of offset values and testing each of the preselected offset values. The examiner disagrees. As stated previously, Shanley states "the recovery apparatus effectively functions to 'sweep' the oscillator's free running frequency in discrete steps from a remote range edge frequency in a direction lessening the difference between oscillator frequency and subcarrier frequency" in column 12, lines 52-64. Each of the discrete steps is a frequency offset value and each offset will be tested to see if a lock has occurred between the oscillator frequency and the subcarrier frequency. The discrete steps are the frequency offset values since the steps are the difference between the present frequency and the starting frequency. The sweeping of the frequency in these discrete steps (offsets) will continue until a frequency lock occurs (column 12, lines 52-64). Therefore, the receiver always determines if the present frequency is locked with the subcarrier frequency.

Applicant states there is no reason or motivation to combine the Shanley and Wang. The examiner disagrees. As stated in the previous office action, it would have been obvious for one of ordinary skill at the time of the invention to combine the signal of Wang into the method and processor of Shanley. This would allow the received HDTV signal to be synchronized between the transmitter and receiver. This allows the recovery of the data to be performed correctly and with minimal errors.

Applicant states there is not reason or motivation to combine the Shanley with Guillemain. The examiner disagrees. As stated in the previous office action, Guillemain discloses using the Mueller and Muller algorithm and the Gardner algorithm for timing recovery (column 5, lines 9-13). These algorithms are well known in the art and it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize these well known algorithms to recover the proper timing of the carrier received in the method and processor of Shanley. Achieving fast and correct timing by using these algorithms is important since demodulation and further processing of the received signal cannot occur until phase lock is established.

For these reasons and the reasons stated in the previous office action, the rejections of the claims are maintained and stated below.

Drawings

5. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Figure 1 is the same as figure 1 of Wang (US 6,266,380) See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are

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required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3-6, 8 and 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Shanley, II (US 4,617,587).

Regarding claims 1 and 8, Shanley discloses a method of synchronizing the received clock and a local clock in a receiver. Shanley states "the recovery apparatus effectively functions to 'sweep' the oscillator's free running frequency in discrete steps from a remote range edge frequency in a direction lessening the difference between oscillator frequency and subcarrier frequency" in column 12, lines 52-64. Each of the discrete steps will comprise a frequency offset and each offset will be tested to see if a lock has occurred between the oscillator frequency and the subcarrier frequency. The

sweep will start at a central offset value and sweep away from the starting value (column 12, lines 57-64).

Regarding claims 3-5 and 10-12, Shanley discloses the sweep will be conducted in discrete steps and continue until the lock is attained. The number of steps can be any number that allows this to occur including nine and the discrete steps can be any discrete value that allows the lock to take place including 200 Hz.

Regarding claims 6, 13 and 14, the method will be conducted in any amount of steps needed to ensure proper phase lock.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanley, II (US 4,617,587) in view of Wang (US 6,266,380).

Regarding claims 2 and 9, Shanley discloses the method stated above. Shanley discloses the received signal is a color television signal (column 1, lines 12-30). Shanley does not disclose the received signal carries a high definition television (HDTV) signal transmitted as a modulated vestigial sideband (VSB) signal formatted as a one-dimensional data constellation of symbols representing digital image data. Wang discloses a receiver for receiving a signal carrying an HDTV signal where the received

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signal is a carrier suppressed 8-VSB modulated signal and the VSB signal is represented by a one-dimensional data symbol constellation (column 1, line 66 to column 2, line 11). Wang further discloses an all digital phase lock loop is used for timing recovery (column 2, lines 33-43). It would have been obvious for one of ordinary skill at the time of the invention to combine the signal of Wang into the method and processor of Shanley. This would allow the received HDTV signal to be synchronized between the transmitter and receiver. This allows the recovery of the data to be performed correctly and with minimal errors.

8. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanley, II (US 4,617,587) in view of Guillemain et al (US 6,175,600).

Regarding claims 7 and 15, Shanley discloses a method and processor for establishing timing synchronism between the oscillator frequency and the subcarrier frequency as stated above. Shanley does not disclose the specific type of recovery algorithms used. Guillemain discloses using the Mueller and Muller algorithm and the Gardner algorithm for timing recovery (column 5, lines 9-13). These algorithms are well known in the art and it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize these well known algorithms to recover the proper timing of the carrier received in the method and processor of Shanley. Achieving fast and correct timing by using these algorithms is important since demodulation and further processing of the received signal cannot occur until phase lock is established.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M. Burd
7/25/2007


KEVIN BURD
PRIMARY EXAMINER